

What is Claimed:

1. A composition comprising:
an inorganic salt capable of hydration and precipitation,
an organic polymer, and
a non-aqueous solvent.
2. A composition as in claim 1 wherein said inorganic salt is one or more salt selected from the group consisting of calcium sulfate-hh, tetracalcium phosphate, alpha tricalcium phosphate, beta tricalcium phosphate, calcium hydrogen phosphate, and disodium hydrogen phosphate.
3. A composition as in claim 1 wherein said inorganic salt is calcium sulfate-hh.
4. A composition as in claim 1 wherein said inorganic salt is calcium phosphate.
5. A composition as in claim 1 wherein said organic polymer is selected from the group consisting of ethyl cellulose, ethyl, ethoxyethyl cellulose, cellulose acetate, cellulose acetate, butyrate, dextran (acyl, alkyl), an organic polysaccharide, an organic polyamide, and an organic urethane.
6. A composition as in claim 1 wherein said non-aqueous solvent is selected from the group consisting of N-methylpyrrolidone, dimethylformamide, dimethylacetamide, dimethylsulfoxide, cyclohexane, methylcyclohexane, tetrahydrofuran, butyl acetate, ethyl acetate, ethyl formate, isopropyl acetate, propyl acetate and isobutyl acetate.
7. A composition as claim 1 further comprising a porosogenic agent.
8. A composition as claim 1 further comprising an accelerator or retarder.
9. A composition as claim 1 further comprising a bioactive agent.
10. A composition as in claim 1 further comprising an agent that imparts radiopacity to said composition.
11. A composition as in claim 10 wherein said agent that imparts radiopacity is selected from the group consisting of barium sulfate, iodipamide and zirconium dioxide.

12. A composition as in claim 1 further comprising bone.
13. A composition as in claim 12 wherein said bone is selected from the group consisting of demineralized bone matrix, allograft bone, or autograft bone.
14. A composition as claim 9 wherein said bioactive agent is an anti-infective.
15. A composition as claim 14 wherein said anti-infective is selected from the group consisting of gentamicin, clarithromycin, doxycycline, minocycline and lincomycin, amikacin, penicillin, cefazolin, ciprofloxacin, enrofloxacin, norfloxacin, silver sulfadiazine, imipenem, piperacillin, nafcillin, cephalexin, cefoperazone, vancomycin, tobramycin, nystatin, and amphotericin B, or salts thereof.
16. A composition as claim 9 wherein said bioactive agent is an antineoplastic agent.
17. A composition as claim 16 wherein said antineoplastic agent is selected from the group consisting of cisplatin, paclitaxel, 5-FU, and doxorubicin.
18. A composition as claim 9 wherein said bioactive agent is a growth factor or osteogenic substance.
19. A composition as in claim 18 wherein said growth factor or osteogenic substance is selected from the group consisting of BMP, TGF, and a non-protein osteogenic factor.
20. A composition as in claim 9 wherein said bioactive agent is a local anesthetic.
21. A composition as in claim 20 wherein said local anesthetic is selected from the group consisting of bupivacaine, lidocaine, etidocaine, and ropivacaine.
22. A composition comprising: demineralized bone matrix, an organic polymer, and a non-aqueous solvent.
23. A composition as in claim 1 or 22 which is injectable.
24. A syringe containing the composition of claim 1 or 22.

25. A method of treating an osseous defect in a mammal comprising administering by injection an amount of a non-aqueous liquid composition to the defect sufficient to reduce the size of the defect, wherein said composition hardens to a solid after injection.

26. A method as in claim 25 wherein said non-aqueous liquid composition comprises an inorganic salt capable of hydration and precipitation, an organic polymer, and a non-aqueous solvent.

27. A method of treating bone graft donor sites by filling the defect with the composition of claim 20.

28. A method of treating a diabetic foot infection in a mammal comprising administering an amount the composition of claim 14 to the infection sufficient to eliminate or reduce the size of the infection.

29. A method of treating a tumor in a mammal comprising administering the composition of claim 16 to the tumor sufficient to reduce the size of the tumor.

30. A method of producing sustained release of an active agent in a mammal comprising administering by injection to said mammal an amount of a non-aqueous liquid composition containing said active agent, wherein said composition hardens to a solid after injection.

31. A method of producing a non-aqueous composition for sustained release of a bioactive agent comprising the steps of:

- a) mixing an inorganic salt capable of hydration and precipitation with a bioactive agent,
- b) preparing a non-aqueous polymer solution using an organic soluble polymer and a non-aqueous solvent, and
- c) blending the product of step a) with the non-aqueous polymer solution.

32. A prosthesis or in-dwelling medical device coated with the composition of claim 1.

33. A syringe containing a non-aqueous liquid composition containing calcium phosphate or calcium sulfate, wherein said composition hardens to a solid after injection in a mammal.

34. A syringe containing a non-aqueous liquid composition containing an active agent, wherein said composition hardens to a solid after injection and provides sustained release of said active agent.

35. A syringe containing the composition of claim 1 or 22.

36. A kit comprising:

a first compartment containing a powder comprised of calcium phosphate or calcium sulfate, a drug and optionally a porosogenic agent; and

a second compartment containing a liquid non-aqueous solution comprised of an organic polymer and a solvent for the polymer, wherein

said powder and liquid non-aqueous solution when mixed form an injectable suspension which hardens to a solid after exposure to an aqueous environment.

37. The kit of claim 36, wherein the first and second compartments comprise respective syringes connectable to one another to allow the powder and liquid non-aqueous solution respectively contained therein to be transferred between the syringes.

38. A method of administering an injectable non-aqueous liquid composition to a mammalian patient, comprising providing a kit as in claim 36, mixing the powder and the liquid non-aqueous solution to form an injectable suspension, injecting the injectable suspension into a mammalian patient at a desired anatomical site, and thereafter allowing the injectable solution to harden to a solid at the site.

39. The method of claim 38, wherein said first and second compartments comprise respective syringes connectable to one another to allow the powder and liquid non-aqueous solution thereof to be transferred therebetween, and wherein said step of mixing the powder and liquid non-aqueous solution comprises fluid-connecting the syringes and then repeatedly transferring the powder and liquid non-aqueous solution between the syringes for a time sufficient to form the injectable suspension.